PROJECT DESCRIPTION

I. GENERAL

This project involves the reconstruction of an existing Traffic Control Signal with street lighting and interconnect at the intersection of MD 32 (Sykesville Rd) and Burntwoods Road in Howard County. The reconstruction is due to intersection geometric improvements. MD 32 (Sykesville Rd) is assumed to run a north-south direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA six-phase, fully-actuated mode, with the MD 32 (Sykesville Rd) approaches continuing to run concurrent. Exclusive/Permissive left turn phases shall now be provided for both approaches of MD 32 (Sykesville Rd). The Burntwoods Road approaches shall now run concurrently.

2. A full-traffic-actuated, eight-phase controller with two (2) four channel, rack mount loop detector amplifiers and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.

2. All controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.

3. The proposed signal structures must be painted brown (Federal Standard Number 595a-20040 as as described in the MSHA Special Provision for Painting New Galvanized Structures.

4. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY THE SHA

NONE

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

SPEC. NUMBER	DESCRIPTION	QUANTITY
814	12", one-way, three-section (R,Y,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	6 EA
814	8", one-way, three-section (R,Y,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 EA
814	12", one-way, five-section (R,Y,YA,G,GA) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 EA
814	Combination 8"-12", one-way, five-section (8"-R,Y,G) (12"-YA,GA) (left arrows) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 EA
	Eight-phase, full-traffic actuated, solid state digital controller with (2) 4-channel, rack mount loop detector amplifiers and detector rack power supply housed in a NEMA size "6 " base- mounted cabinet	1 EA
205	Test pit excavation.	5 C.Y.
801	Furnish and install concrete for signal foundation.	17 C.Y.
813	Ground mounted sheet aluminum signs to consist of:	41 S.F.
	D3-2 (MOD) "(arrow) Burntwoods Road / Andrea Drive (arrow)/ NEXT SIGNAL" (72"X36") ground mounted.	1 Each
	D3-2 (MOD) "(arrow) Andrea Drive / Burntwoods Road (grrow) / NEXT SIGNAL" (72" x 36") ground mounted.	1 Each
	R1-2 "YIELD" (36"x36"x36") ground mounted.	1 Each
	R3-7R "RIGHT LANE MUST TURN RIGHT" (30"X30") ground mounted.	2 Each
813	Overhead mounted sheet aluminum sign consisting of:	96 S.F.
	D3-2 "(arrow) Andrea Dr/ Burntwoods Rd (arrow)" (variable x 32") mast arm mounted.	1 Each
	D3-2 "(arrow) Burntwoods Rd / Andrea Dr (arrow)" (variable x 32") mast arm mounted.	1 Each
	M95-1 "Sykesville Rd." (W/GR)/ "SOUTH (ARROW) MD 32 NORTH (arrow)" (BLK/W) (72" x 36") mast arm mounted.	1 Each
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36") mast arm mounted.	2 Each
	R10-12 "LEFT TURN YIELD ON GREEN (BALL)" sign, (36" x 42") mast arm mounted.	2 Each
	Raised pavement marker.	10 Each
556	5" white heat applied permanent preformed thermoplastic pavement marking	1885 L.F.

EQUIPMENT LIST (CONT.)

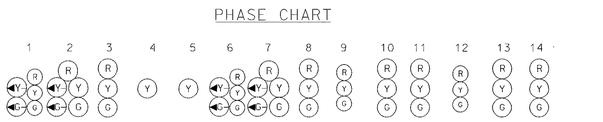
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

SPEC. NUMBER	DESCRIPTION	QUANTITY
556	5" yellow heat applied permanent preformed thermoplastic pavement marking	1980 L.F.
556	10"yellow heat applied permanent preformed thermoplastic pavement marking	55 L.F.
556	10" white heat applied permanent preformed thermoplastic pavement marking	270 L.F.
556	24" white heat applied permanent preformed thermoplastic pavement marking	125 L.F.
556	Furnish and install heat applied permanent preformed thermoplastic pavement marking arrow. (right)	2 EA
	Remove existing pavement markings	900 L.F.
	Remove raised pavement marker.	6 EA
	Macadam patch (to patch 300' of existing rumble strip)	LUMP SUM
815	Saw cut for signal (loop detector).	435 ~~420~~ L.F.
805	1" galvanized steel electrical conduit (detector wire sleeve)	10 L.F.
805	1" liquid tight flexible non-metallic conduit for detector sleeve.	30 L.F.
805	Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - trenched	1305 ~~1320~~ L.F.
805	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - trenched	90 ~~85~~ L.F.
805	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	390 ~~360~~ L.F.
811	Furnish and install electrical handhole.	11 EA
810	Furnish and install loop wire encased in flexible tubing (No. 14 AWG).	1460 ~~1445~~ L.F.
810	Furnish and install electrical cable - 2 conductor (aluminum shielded).	630 ~~515~~ L.F.
810	Furnish and install 5-conductor electrical cable (No. 14 A.W.G.).	120 L.F.
810	Furnish and install 7-conductor electrical cable (No. 14 A.W.G.).	1650 ~~1640~~ L.F.
810	Furnish and install ground rod - 3/4" x 10'.	5 EA
810	Furnish and install No. 6 AWG stranded bare copper ground wire.	540 ~~535~~ L.F.
810	Furnish and install tray cable - 2 conductor (No. 12 AWG)	330 ~~370~~ L.F.
	Relocate existing overhead or ground mounted sign	1 EA
	Remove and dispose of existing signal equipment.	LUMP SUM
812	Furnish and install wood sign supports (4"x4").	50 L.F.
812	Furnish and install wood sign supports (4"x6").	70 L.F.
806	Furnish and install 250 watt HPS Luminaire with photocell.	2 EA
808	Furnish and install 15' lighting bracket arm for traffic signal structure.	2 EA
	Cut, clean and cap mast arm / steel pole.	1 EA
	Remove and dispose of existing foundation 12" below grade.	2 EA
807	Furnish and install control and distribution equipment (120/240 V, 1 phase 3 wire system).	1 EA
	Furnish and install 27' steel pole (brown Fed Std 595a-20040) pole and 50' mast arm.	1 EA
	Furnish and install 27' steel pole (brown Fed Std 595a-20040) pole and 50' (cut to 40') mast arm.	1 EA
	Furnish and install 27' steel pole (brown Fed Std 595a-20040) pole and 60' mast arm.	1 EA
	Furnish and install 27' steel pole (brown Fed Std 595a-20040) pole and 70' mast arm.	1 EA
	Furnish and install micro-loop with 1000' lead-in.	2 EA
	Remove and dispose of lighting pole, arm and luminaire.	1 EA
810	Furnish and install 5-conductor electrical cable (No. 10 A.W.G.).	1090 ~~1080~~ L.F.
	Pull back Reroute existing interconnect cable.	150 ~~1660~~ L.F.
810	**Furnish and install 12-pair communication cable, underground (jelly filled)**	1400 L.F.

C. EQUIPMENT TO BE RETURNED TO THE SHA

All equipment to be removed shall become property of the contractor.

PHASE CHART

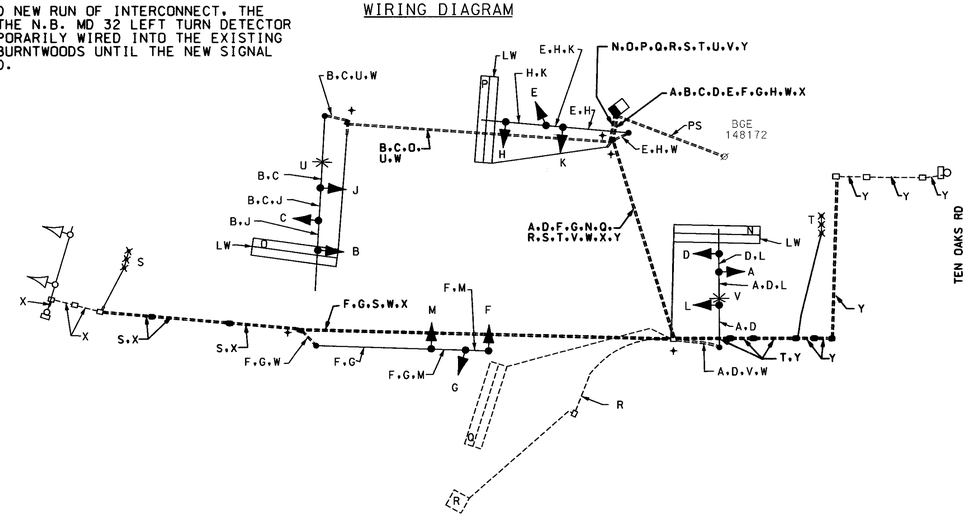


	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 & 5	◄G-/R	◄G-/R	R	FL/Y	FL/Y	◄G-/R	◄G-/R	R	R	R	R	R	R	R
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6														
PHASE 1 & 6	◄G-/G	◄G-/G	G	FL/Y	FL/Y	R	R	R	R	R	R	R	R	R
1 & 6 CHANGE	◄Y-/G	◄Y-/G	G	DARK	DARK	R	R	R	R	R	R	R	R	R
PHASE 2 & 5	R	R	R	DARK	DARK	◄G-/G	◄G-/G	G	R	R	R	R	R	R
2 & 5 CHANGE	R	R	R	DARK	DARK	◄Y-/G	◄Y-/G	G	R	R	R	R	R	R
PHASE 2 & 6	G	G	G	DARK	DARK	G	G	G	R	R	R	R	R	R
2 & 6 CHANGE	Y	Y	Y	DARK	DARK	Y	Y	Y	R	R	R	R	R	R
PHASE 4 & 8	R	R	R	FL/Y	FL/Y	R	R	R	G	G	G	G	G	G
4 & 8 CHANGE	R	R	R	FL/Y	FL/Y	R	R	R	Y	Y	Y	Y	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R

NOTE:

THE PROPOSED NEW RUN OF INTERCONNECT, THE PROBES AND THE N.B. MD 32 LEFT TURN DETECTOR MUST BE TEMPORARILY WIRED INTO THE EXISTING CABINET AT BURNTWOODS UNTIL THE NEW SIGNAL IS COMPLETED.

WIRING DIAGRAM



The contact persons for District #7 are as follows:

Mr. John Concannon
Assistant District Engineer - Traffic
Phone: (310) 624-8141

Mr. Dave Coyne
Assistant District Engineer - Maintenance
Phone: (310) 624-8106

Mr. Jim Buckalew
District Engineer - Utility
Phone: (301) 624-8110

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

WIRING KEY

- A, B, C, D, E, F, G, H, W, X: 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- K, L, M: 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- N, O, P, Q, R, S, T, U, V, Y: 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) ALUMINUM SHIELDED
- S: MICROLOOP LEAD-IN CABLE (1000')
- U, V: 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- W - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- X - 5-CONDUCTOR ELECTRICAL CABLE (NO. 10 A.W.G.)
- Y - **12-PAIR VOICE GRADE INTERCONNECT CABLE TO BE INSTALLED FROM EXISTING CABINET AT TEN OAKS RD TO EXISTING CABINET AT BURNTWOODS**
- LW - LOOP WIRE (NO. 14 A.W.G.)
- PS - PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY BGE
- + - GROUND ROD

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
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4211gi.dgn

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
MD 32 (SYKESVILLE RD) AND BURNTWOODS RD

DRAWN BY:	ROB CICCHINI	F.A.P. NO.		TS NO. 3258A	SHEET NO. 2 OF 3
CHECKED BY:	R ZACHERL	S.H.A. NO.	BW996M82		
SCALE:	NONE	COUNTY:	HOWARD	T.I.M.S. NO. F416	
DATE:	10-20-04	LOG MILE:	13003216.56		

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